REMARKS/ARGUMENTS

Reconsideration and withdrawal of the rejections of the application are respectfully requested in view of the amendments and remarks herewith, which place the application into condition for allowance. The present amendment is being made to facilitate prosecution of the application.

I. STATUS OF THE CLAIMS AND FORMAL MATTERS

Claims 1-9 are currently pending. Claims 1, 8 and 9 are independent. Claims 2-5 are hereby amended. No new matter has been introduced. Support for this amendment is provided throughout the Specification as originally filed.

Changes to the claims are not made for the purpose of patentability within the meaning of 35 U.S.C. §101, §102, §103, or §112. Rather, these changes are made simply for clarification and to round out the scope of protection to which Applicants are entitled.

II. REJECTIONS UNDER 35 U.S.C. §112

Claims 2-5 have been amended to overcome the rejection under 35 U.S.C. §112.

III. REJECTIONS UNDER 35 U.S.C. §103

Claims 1-2 and 7-8 were rejected under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,218,668 to Higgins et al. (hereinafter merely "Higgins") in view of U.S. Patent No. 5,963,903 to Hon et al. (hereinafter merely "Hon");

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Claim 3 was rejected under 35 U.S.C. §103 as allegedly unpatentable over Higgins and

Hon in view of Chiang et al. (*"On Jointly Learning the Parameters in a Character-Synchronous*

Integrated Speech and Language Model," 1996) (hereinafter merely "Chiang"); and

Claims 4 and 9 were rejected under 35 U.S.C. §103 as allegedly unpatentable over

Higgins and Hon in view of U.S. Patent No. 6,178,401 to Franz et al. (hereinafter merely

"Franz").

Claims 5 and 6 were rejected under 35 U.S.C. §103 as allegedly unpatentable over

Higgins and Hon in view of U.S. Patent No. 5,960,447 to Holt et al. (hereinafter merely "Holt").

Applicants respectfully traverse this rejection.

Independent, as amended, claim 1 is representative and recites, *inter alia*:

> "selecting one or more candidate first words from the plurality of input words to
> be processed by speech recognition processing based on a word score that
> represents an evaluation of acoustic scores and language scores calculated using
> said characteristic values, and for selecting one or more candidate second words
> from the plurality of input words not based on the acoustic score;"

The speech recognition apparatus according to the present invention includes selection

means for selecting candidate first words from the input words based on a word score that

represents an evaluation of acoustic scores and language scores selecting candidate second words

from the plurality of input words not based on the acoustic score. *See, for example,* Publ. App.

pars. [0100]-[0101] and [0103]-[0104].

First, the Office Action, at page 4 (par. beginning, "Selection means . . .") misstates the

elements of claims 1 and 8. The Office Action states the element as, "selecting one or more

candidate second words from the plurality of input words based on a second measure different

from said first measure." (emphasis added). Applicants respectfully point out the claims do not recite the emphasized language. The language was amended in Applicants September 18, 2007 reply to the Office Action mailed July 12, 2007. However, Applicants are aware the Office Action, at page 5, addresses the amended language by referencing Hon.

Second, the Office Action points to Higgins for the claim 1 element:

"selecting one or more candidate first words from the plurality of input words to be processed by speech recognition processing based on a word score that represents an evaluation of acoustic scores and language scores."

That is, the Office Action points to Higgins as disclosing the method of speech recognition in which the first word candidates are selected. The Office Action asserts Higgins "[determines] a first word hypothesis set based on a matching algorithm utilizing a keyword template" (*Higgins*, col. 4, lines 49-66 and col. 6, lines 16-46) and "syntax language models." (*Higgins*, col. 8, lines 18-26). (Emphases added).

The Office Action unreasonably expands the description of Higgins to read on the recited claim 1 language. There is no suggestion in Higgins that both an acoustic model and a language score are used to select the first words. The templates of Higgins do not teach or suggest that the keyword template selects words based on an acoustic score while also selecting the words based on the language score as recited in claim 1. Indeed, as understood by Applicants, Higgins does not base a first word selection on both the acoustic and language scores but rather on a sequence of templates. *Higgins,* col. 8, lines 8-29; and col. 8, lines 43-49.

That is, in Higgins, the first type of candidate is selected based on a matching algorithm using a keyword template; the second type of candidate word is selected based on a matching algorithm using a filter template. However, the templates of Higgins do not teach or suggest that

the keyword template selects words based on both an acoustic score and a language score as recited in claim 1.

In contrast, in the present invention, words are selected based upon receipt of the acoustic and language scores of the word supplied. Publ. app. pars. [0112], [0081].

Moreover, claim 1 recites, "selecting one or more candidate second words from the plurality of input words not based on the acoustic score." That is, after a selection of the first words, second words are selected based on a non-acoustic model.

From the as-filed specification, the word pre-selection unit 13 selects the word most probable as the result of speech recognition, based on the word score including the acoustic score calculated from the acoustic characteristic value, while selecting the words having unstable acoustic characteristic values having a small number of phonemes, such as adjuvants or adjuvant-verbs in Japanese or prepositions or articles in English, based on a measure irrelevant to the acoustic score calculated from acoustic characteristic values, these words being matching-processed in the matching unit 14, thus preventing deterioration of precision in the speech recognition otherwise caused by non-selection in the word pre-selection unit 13 of the words having unstable acoustic characteristic values.

Because the words having a small number of phonemes and unstable acoustic characteristic values are necessarily processed for matching, only the words having a large number of phonemes and hence more stable acoustic characteristic values may be selected based on the word score including the acoustic score.

A non-acoustic selection method is then used to select words having unstable acoustic characteristics. That is, selected words likely to be concatenated to a sequence towards a node under consideration of a path reaching the node under consideration, based only on the language score obtained from the grammatical rule derived from the statistic word concatenation probability. Because the word is selected in this case without taking the acoustic score calculated from the characteristic values into account, it is possible to prevent the accuracy in the speech recognition from being deteriorated by failure in selection of such words the acoustic score of which is diminished by the unstable acoustic characteristic values and hence the word score of which is decreased. Publ. app. pars. [0117]-[0122].

The Office Action points to Hon, col. 10, lines 16-52, for the element of selecting second words based on a non-acoustic model recited in claim 1. This is disingenuous. Clearly, there are word selection measures not based upon acoustic models. The Office Action then uses Applicants invention as a blueprint to combine the references. It is Applicants invention of selecting first words base upon both the acoustic and language models, then applying a non-acoustic measure to select second words therefrom.

The present invention has the advantage that from a set of words in received speech subjected to processing for speech recognition, one or more first candidate words of the received speech are selected on the basis of both an acoustic model and a language measure, while one or more candidate second words from the received speech are selected on the basis of a non-acoustic measure. The scores are calculated on the so <u>selected first and second candidate words</u>

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<u>from the received speech</u>. Thus, the risk of deterioration in the accuracy in speech recognition is reduced due to non-selection of the second words based on the first measure.

Neither Higgins nor Hon teach or suggest the elements of claim 1 as discussed above.

For reasons similar or somewhat similar to those described above with regard to independent claim 1, independent claims 8 and 9 are also believed to be patentable.

IV. DEPENDENT CLAIMS

The other claims are dependent from one of the claims discussed above and are therefore believed patentable for at least the same reasons. Because each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

CONCLUSION

Claims 1-9 are in condition for allowance. In the event the Examiner disagrees with any of statements appearing above with respect to the disclosure in the cited reference, or references, it is respectfully requested that the Examiner specifically indicate those portions of the reference, or references, providing the basis for a contrary view.

Please charge any additional fees that may be needed, and credit any overpayment, to our Deposit Account No. 50-0320.

In view of the foregoing amendments and remarks, it is believed that all of the claims in this application are patentable and Applicants respectfully request early passage to issue of the present application.

Respectfully submitted,

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